# CHAPTER 1: GENERAL INFORMATION

## A. Introduction

The raccoon rabies epizootic reached Massachusetts in September 1992 and has spread to all parts of the Commonwealth except Cape Cod and the islands of Martha's Vineyard and Nantucket. Bat rabies, first detected in Massachusetts in 1961, continues to be a problem throughout the state.

Since September 1992, more than 36,000 animal specimens have been submitted to the State Laboratory Institute (SLI) for rabies testing. Of these specimens, nearly 4,000 have tested positive for rabies. Positive animals include more than: 2,000 raccoons, 1,200 skunks, 200 bats, 100 cats, 50 foxes and 50 woodchucks. Other species that have had at least one animal test positive in Massachusetts include: cattle, dog, horse, pig, otter, fisher, goat, chinchilla, shrew, rabbit, and deer.

The number of cases of rabies identified in animals in Massachusetts peaked in 1994 at 735 cases. Since then, depending on the population dynamics of the wild animal population that serves as a reservoir for the rabies virus, the number of cases of rabies identified in animals has varied in 3-5 year cycles.

The public health impact of rabies in Massachusetts remains significant. On average, each rabid animal identified in Massachusetts exposes one human and two pets. Significant time and resources are expended in testing suspect animals, in evaluating human and pet exposures, and in the quarantine of pets that have bitten or scratched humans or other pets.

Local health directors have the lead responsibility for the development of rabies policy and for oversight of rabies-related prevention and control activities in their jurisdictions. However, many other individuals are key participants, including Animal Control Officers and Animal Inspectors, police, veterinarians, health care workers, and others. It is essential that good communication exist between all parties involved in a comprehensive, local rabies response team.

Each community in Massachusetts must assume it has bat rabies, and except for Cape Cod and the islands, communities must assume they also have terrestrial rabies. Provisions should be made at the local level for each of the steps involved in a comprehensive rabies control program. For each step of your comprehensive program, you should identify persons responsible and facilities or resources to be used. For each individual community the need for transportation arrangements and facilities for isolation and quarantine occurs infrequently. However, when the need arises, advanced preparation and communication are essential to ensure an efficient and effective response.

The goals of local rabies prevention and control activities are: 1) to prevent human cases of rabies and 2) to prevent rabies in domestic animals. The purpose of this Rabies Control Plan is to review the prevention and control activities that can help to attain these goals. The document is divided into sections on human exposures, domestic animal issues, and wild animal issues.

## B. Elements of a Comprehensive Rabies Control Plan

1. Capture of suspect rabid animals that have exposed humans or domestic animals;
2. Euthanasia of suspect rabid animals;
3. Decapitation of animals whose heads are to be sent to the MDPH State Laboratory Institute (SLI) for rabies testing;
4. Proper transportation of animal heads to the MDPH SLI for rabies testing;
5. Disposal of carcasses after decapitation;
6. Quarantine of domestic animals for which there is a USDA-approved vaccine (cats, dogs, ferrets, cattle, horses and sheep) which have bitten humans; and
7. Isolation and confinement of domestic animals with exposure to suspect rabid animals according to state guidelines and regulations.

**Personnel and resources also need to be identified to provide:**

1. Education/information activities for the general public, particularly children and health care providers;
2. Post-exposure education and information to guide decision-making and advice; and
3. Pre-exposure immunization information.

## C. Legislative Authority / Relevant Laws and Regulations

1. Anti-rabic vaccine and treatment; reimbursement for cost (MGL c.140, s.145A).
2. Rules and regulations relative to the treatment of persons exposed to rabies (105 CMR 335.000).
3. Vaccination against rabies; certificate; tag; proof of vaccination; penalty (MGL c. 140, s. 145B).
4. Regulations relative to the vaccination of dogs and cats against rabies (105 CMR 330.000).
5. Prevention of the spread of rabies (330 CMR 10.00). Regulations concerning the vaccination of and quarantine of domestic animals.
6. Quarantine of diseased animals: notice of order; records (MGL c.129, ss.21-27).
7. Notice of contagious disease to director (MGL c.129, s.28). Contagious diseases in animals must be reported to the Department of Food and Agriculture.
8. Ferrets; possession and use (MGL c.131, s.77).
9. Most wildlife species, including raccoons, skunks, and foxes, are prohibited as pets (MGL c.131, s.23 and CMR 2.12 (9)).
10. Translocation and release of wild animals is prohibited (MGL c.131, s.19A and 321 CMR 2.14 (23) (b)).

11. Captured problem animals must be released at the point of capture or destroyed (321 CMR 2.14 (23) (b)).

12. Rehabilitated injured wildlife must (with few exceptions) be released at "a location within five miles of the point of capture, or within the same county to which the permittee maintains facilities" (321 CMR 2.13 (2) and (22) (a)).

13. Quarantine of diseased fish, birds, mammals, etc.; order or notice; procedures; liability for expenses (MGL c. 131, ss. 25A-25C). Quarantine of wild animals including those crossbred to domestic animals.

## D. Definitions as Used in this Document

Definitions marked with an asterisk (*) have been abstracted from the Massachusetts Department of Food and Agriculture regulations, PREVENTION OF THE SPREAD OF RABIES, 330.0 CMR 10.00.

**Exposed*** – shall include: Exposed by Direct Contact, Exposed by Proximity or received a Wound of Unknown Origin.

**Exposed by Direct Contact*** – Had physical contact with, received a bite or scratch from, or ate the viscera of a confirmed or suspected rabid animal.

**Exposed by Proximity*** – Seen near or in the vicinity of a confirmed rabid animal, but had no physical contact with nor received any wounds from the confirmed rabid animal.

**HRIG (Human Rabies Immune Globulin)** – Pre-formed antibodies against rabies virus, which can be injected into a human after an exposure to a confirmed or suspect rabid animal. HRIG is used, in conjunction with the vaccine series, *only* when the exposed human has not previously been vaccinated for rabies. Also referred to as RIG (Rabies Immune Globulin).

**Incubation Period** – The time it takes for symptoms to begin after an animal or human is exposed to a disease-causing organism.

**Isolation*** – Restricting a domestic animal from direct contact with any human or other animal; confining the animal to a facility such as a dog pound, veterinary hospital, commercial kennel or quarantine facility for livestock approved by the Animal Inspector of the appropriate municipality; or isolation at home under conditions approved by the Animal Inspector of the municipality and the Department [of Food and Agriculture].

**Post-Exposure Prophylaxis (PEP)** – A series of injections including rabies vaccine and human rabies immune globulin, used to prevent rabies from developing in a human after exposure to a suspected or confirmed rabid animal.

**Quarantine*** – Confinement of a domestic animal from humans and other animals for the purposes of observing the animal for signs of rabies and minimizing chances of the animal spreading rabies to humans and other animals. This includes isolation and strict confinement.

[Note: There are several different types of animal quarantines used in rabies control. These include a 10-day quarantine, a 45-day quarantine, and a 180-day quarantine. The details of each exposure are evaluated on a case-by-case basis to determine the appropriate length of quarantine. For more information about quarantines of cats, dogs, and livestock, call the Department of Food and Agriculture, Bureau of Animal Health at (617) 626-1794; for information about quarantines of ferrets, call the Department of Fisheries, Wildlife and Environmental Law Enforcement (DFWELE), Division of Fisheries and Wildlife (DFW) at (617) 626-1591. For information about the implications of animal quarantines for human exposures, call the MDPH Division of Epidemiology and Immunization 617-983-6800.

**RIG (Rabies Immune Globulin)** – See "HRIG" definition above.

**Shedding** – The release of rabies virus from the salivary glands into the saliva. When shedding occurs in an animal infected with rabies, the virus can be transmitted if the virus-containing saliva enters the body of a human or other animal via a bite, scratch, a break in the skin, or a mucous membrane.

**Signs of Rabies*** – In animals, unexplained aggression, impaired locomotion, varying degrees of paralysis, extreme depression, or viciousness. The signs of rabies vary in animals; some will display attack-like behavior while others appear sick or dazed.

**Strict Confinement*** – Maintenance of a domestic animal in an escape-proof, solid-walled building with a roof, approved by the Animal Inspector of the municipality. The animal may be leash walked by an adult or under the direct supervision of an adult.

**Suspect Rabid Animal*** – 1) any raccoon, bat, fox, skunk, woodchuck (groundhog), coyote or opossum in Massachusetts; 2) or other wild mammal showing signs consistent with rabies; 3) domestic animals such as dogs, cats, ferrets or livestock showing signs of rabies. (NOTE: The rabies virus can infect any mammal. Birds, reptiles, amphibians and fish can not transmit rabies. Squirrels, rats, moles, mice and other small, wild rodents are rarely found to be infected with rabies and therefore should only be considered as suspect if displaying signs suggestive of rabies.)

**Symptoms of Rabies** – See **"Signs of Rabies"** definition above.

**Viral Shedding** – See "**Shedding**" definition above.

## E. Agency Roles and Responsibilities

### Massachusetts Department of Public Health (MDPH), Bureau of Communicable Disease Control (BCDC), Division of Epidemiology and Immunization

The role of MDPH, BCDC is to provide technical guidance to local boards of health, medical personnel and individuals regarding the evaluation, management and control of human exposures to known or suspect rabid animals.

MDPH, BCDC may provide preliminary guidance regarding the quarantine of animals; however, formal jurisdiction for the enforcement of quarantine regulations of domestic animals lies with the Department of Food and Agriculture, Bureau of Animal Health, and

for the enforcement of quarantine regulations of ferrets with the Department of Fisheries, Wildlife and Environmental Law Enforcement (DFWELE), Division of Fisheries and Wildlife (DFW).

**Massachusetts Department of Public Health (MDPH), State Laboratory Institute (SLI), Bureau of Laboratory Sciences (BLS), Virology Laboratory**

The role of the MDPH State Laboratory Institute is to provide accurate, timely testing of suspect rabid animals involved in exposures of humans or domestic animals. Viral strain typing is performed for rabies virus-positive animals other than raccoons. Laboratory staff report individual results daily to submitters, BCDC epidemiologists, local boards of health, and Bureau of Animal Health staff, and forward composite results to the federal Centers for Disease Control and Prevention (CDC). Positive results are also sent to the Division of Fisheries and Wildlife. Laboratory personnel maintain a database of results with selected demographic information. Additional testing is performed in support of the Cape Cod Oral Rabies Vaccination Program and other efforts to track and prevent the spread of rabies virus in the Commonwealth.

**Massachusetts Department of Fisheries, Wildlife, and Environmental Law Enforcement (DFWELE), Division of Fisheries and Wildlife (DFW)**

The role of DFWELE, DFW is to provide technical guidance to state and local agencies and individuals regarding the status, distribution, and control of wildlife, including rabies vector species. DFW strives to increase public awareness of wildlife and wildlife disease issues, to regulate the exclusion and removal of wildlife from homes by licensed Problem Animal Control Agents, to regulate the harvest of raccoons by licensed hunters and trappers, and to provide an emergency response to sick or aggressive wild animals that pose a high risk to public safety, when other alternatives are lacking. DFW's regulations prohibit the relocation of wild animals within the state and possession of most wild mammals as pets, and prohibit or restrict the importation of high-risk rabies vector species. DFW is also responsible for regulating the rabies vaccination and quarantine of domestic ferrets.

**Massachusetts Department of Food and Agriculture (MDFA), Bureau of Animal Health (BAH)**

The role of the MDFA, BAH is to provide technical guidance to veterinarians, medical or health professionals, Animal Inspectors, Animal Control Officers and the public regarding rabies in domestic animals. BAH issues include: rabies vaccination protocols; management of domestic animals exposed or possibly exposed to rabid animals; and, quarantine or testing procedures for domestic animals that have potentially exposed humans to rabies. BAH appoints an Animal Inspector for each city and town in the Commonwealth. Animal Inspectors are responsible for implementing and maintaining rabies quarantines on all domestic animals. BAH also assists municipalities with prevention efforts through promotion of low-cost rabies vaccination clinics for companion animals.

**US Department of Agriculture (USDA), Animal and Plant Health Inspection Services (APHIS), Wildlife Services (WS)**

The Wildlife Services (WS) program of the United States Department of Agriculture's (USDA), Animal and Plant Health Inspection Service (APHIS) provides leadership and cooperative assistance in managing damage or conflicts caused by wildlife. WS provides a lead agency role in collaborative wildlife rabies management in the U.S., and cooperates in international rabies control efforts as well.

WS has determined that preventing the spread of rabies to Cape Cod is an important objective of rabies management in Massachusetts. To support this objective, WS assists MDPH and Tufts University School of Veterinary Medicine on the Cape Cod Oral Rabies Vaccination Program in southeastern Massachusetts to: (1) help reduce the incidence of terrestrial rabies in areas directly adjacent to the Cape Cod Canal, and (2) gather information critical to wildlife rabies management in Massachusetts and applicable areas elsewhere. WS provides assistance in oral rabies bait acquisition and distribution, wildlife density estimation, wildlife rabies surveillance and management technique trials, and vector ecology investigations. Additional assistance from WS regarding rabies management in Massachusetts may include the dissemination of critical wildlife rabies management information from other states and from the WS National Wildlife Research Center and assistance with public relations.

## F. List of Acronyms and Abbreviations

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| ACIP | Advisory Committee on Immunization Practices |
| ACO | Animal Control Officer |
| ACOAM | Animal Control Officers Association of Massachusetts |
| APHIS | Animal and Plant Health Inspection Services |
| CCORVP | Cape Cod Oral Rabies Vaccination Program |
| CDC | Centers for Disease Control and Prevention |
| DFW | Division of Fisheries and Wildlife |
| HDCV | Human diploid cell vaccine |
| HRIG | Human rabies immune globulin |
| LBOH | Local board of health |
| MDFA | Massachusetts Department of Food and Agriculture |
| MDFWELE | Massachusetts Department of Fisheries, Wildlife, and Environmental Law Enforcement |
| MDPH | Massachusetts Department of Public Health |
| MMS | Massachusetts Medical Society |
| MSPCA | Massachusetts Society for the Prevention of Cruelty to Animals |
| MVMA | Massachusetts Veterinary Medical Association |
| PAC | Problem Animal Control Agents |
| PCEC | Purified chick embryo cell (vaccine) |
| PEP | Post-exposure prophylaxis |
| RFFIT | Rapid fluorescent focus inhibition test (serological test) |
| RIG | Rabies immune globulin |
| RVA | Rabies vaccine adsorbed |
| SLI | State Laboratory Institute |
| TUSVM | Tufts University School of Veterinary Medicine |
| USDA | US Department of Agriculture |
| WHO | World Health Organization |

## G. Organizational Chart of State Agencies Involved in Rabies Control (January 2003)